

**IN THE UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF TENNESSEE  
AT KNOXVILLE**

---

**BATTLES, INC.,**

**Plaintiff,**

**v.**

**No: 3:19-cv-00013-TWP-DCP  
JURY DEMANDED**

**NATIONWIDE GENERAL  
INSURANCE COMPANY,**

**Defendant.**

---

**DECLARATION OF THOMAS IRMITER PURSUANT TO 28 U.S.C. § 1746**

---

The undersigned, being duly sworn upon oath, does hereby swear and affirm that the following facts are true and correct to the best of his knowledge:

1. My name is Thomas Irmriter. I am over eighteen (18) years of age and have personal knowledge of the information contained within this Declaration.
2. I am the owner/principal of Forensic Building Sciences, Inc. (“FBS”).
3. I opened FBS in 2004. I specialize in building failure analysis, estimating, project management, forensic building inspections, and the construction industry.
4. FBS was hired to inspect the Insured Premises and to conduct sampling for aciniform fire particulate including soot and char to be sent to a qualified laboratory for testing.
5. My report for the building indicated that it had been damaged by the wildfire through the deposition of aciniform fire particulate including soot and ash throughout the roof assemblies, window assemblies, interior partition walls, light fixtures and ducting. The HVAC

ducting, electrical outlets, plumbing chases, dropped soffits, dropped ceiling components and common room areas were typically affected. (**Exhibit A**, FBS Report).

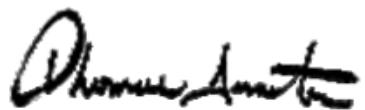
6. Aciniform fire particulate including char consistent with wildfires was found in 17 of 19 samples taken, with some samples with percentages as high as 50%. (Exhibit A).

7. Further, aciniform fire particulate including soot and/or char was found in concentrations of 1.0 particles per field or greater in 12 of the 19 of locations sampled. (Exhibit A).

8. My report determined a protocol for repairs that the Insured Premises required. (Exhibit A).

I declare/certify/verify/state under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on this the 4th day of May 2020.



---

THOMAS IRMITER  
C.E.O. FORENSIC BUILDING SCIENCES

**Forensic Building Science, Inc.**  
**657 Lincoln Avenue**  
**St. Paul, MN 55105**  
**T: 651.222.6509**  
[www.forensicbuildingscience.com](http://www.forensicbuildingscience.com)

**Date:** November 17, 2017

**Client:** Howarth Group

**Property:** Jim Wood's Strip Center & Restaurant  
1359 East Pkwy,  
Gatlinburg, TN 37738

Dear Mr. Howarth:

This letter will serve as an interpretation with recommendations from our particulate matter sampling at the above referenced property. Air sampling and tape lift sampling was performed by Forensic Building Science (FBS) on October 11, 2017 in response to a recent forest fire.

### **I. Summary of Opinions**

Based on the site inspection and documentation of the damages conducted by FBS, including review of the results of our soot sampling I have concluded that the property in question located at 1359 East Pkwy, Gatlinburg, TN 37738 has been damaged by the wild fire through the deposition of soot and ash throughout the roof assemblies, window assemblies, interior partition walls, light fixtures and ducting. Based on the sample results, and the type of construction in the building, it is my opinion that the forest fire caused damage to the building through the deposition of carcinogenic soot into hidden wall, ceiling and floor cavities. This soot is still viable in the ambient air as evidenced by our sampling results.

### **II. Sampling Results**

N.G. Carlson Analytical, Inc.  
216 16th Ave. S.W.  
New Brighton, MN 55112

October 21, 2017

RE: Jim Wood's strip center and Restaurant 1359 E. Pkwy, Gatlinburg, TN 37738

**Air-o-cell cassette samples (October 11, 2017)**

Location (description from chain of custody)	Trace density	Primary Particles	Notes
3 – Back dining area electrical box conduit line (30 liters)	Light trace	Char [<0.5] Soot [<0.5]	
7 – Bathroom Hallway Interior wall (30 liters)	Heavy trace	Char [<0.5] No Soot	
9 – Bar/stage area dropped ceiling (30 liters)	Light trace	Char [<0.5] No Soot	
10 – Kitchen area interior wall (30 liters)	Light trace	Char [<0.5] No Soot	
12 – Subway dining area dropped soffit (30 liters)	Heavy trace	Char [1-2] Soot [<1]	
14 – Fine Wine and Liquors (back of store) Ambient air in dropped ceiling (75 liters)	Moderate trace	Soot [<0.5] Char [<0.5] Carbon black [4-5]	
17 – Radio Shack (store front) dropped ceiling (30 liters)	Heavy trace	Soot [<0.5] Char [<0.5]	
19 – Discount cigarettes and beer outside soffit (30 liters)	Very light trace	No char or soot	

Tease tape samples (October 11, 2017)

Location (description from chain of custody)	Trace density notes	Primary Particles	Notes
1 – Back dining area tape lift top of sprinkler system pipe	Heavy	Char [4-5] No Soot	Non - standard char shape
2 – Back dining area tape lift underside of metal decking	Moderate	No Char Soot [1-2]	Non – typical soot shape
4 – Middle dining room area tape lift metal joist	Heavy trace	Char [5-6] No Soot	Non - standard char shape
5 – Bar area tape lift middle ceiling vent	Heavy trace	Char [4-5] No Soot	Non - standard char shape
6 – Lobby tape lift arch-way top of trim	Heavy Trace	Char [4-5] Soot [<0.5]	
8 – Lobby tape lift top of CMU wall	Moderate trace	Char [1 - 2] Soot [<0.5]	Non - standard char shape
11 – Subway tape lift above dropped ceiling CMU wall	Moderate trace	Char [1-2] No Soot	Non - standard char shape
13 – Fine wines and Liquors tape lift (front of store) dropped ceiling tile near vent	Heavy trace	<b>Char [50+]</b> No Soot	
15 – Super Suds Laundry tape lift top of wall (store front)	Light trace	Soot [<1] Char [2-3]	
16 – Radio Shack tape lift middle of store ceiling vent	Heavy trace	<b>Char [20+]</b> <b>Soot [20+]</b>	

18 – Discount cigarettes and beer tape lift top of metal siding	Moderate trace	Soot [<1] Char [4-5]	
---	----------------	-------------------------	--

### Char and soot-like particle interpretation:

Less than 0.5 particles per field (400x) - negligible impact of smoke

0.5 and 2.0 particles per field (400x) - limited impact of smoke

2.0 and 10 particles per field (400x) - moderate impact of smoke

10 - 50 particles per field (400x) - Significant impact of smoke

> 50 particles per field TNTC - Major impact of smoke

\* Several large clusters of soot-like particles noted

### Methods:

The tease tape and Air-o-cell Cassette traces were identified under light microscopy viewed at 100x, 200x and 400x. Lacto fuchsin stain in 85% lactic acid was used to aid in identification.

No chemical identification was conducted on the soot-like, char-like particles, and carbon black-like particles. Presumptive identification was based on particle morphology.

### Discussion:

Soot levels varied from negligible to significant on the tease tape samples.

Char levels varied from not noted to major on the tease tape samples.

Char levels varied from not noted to limited on the air samples.

Soot levels varied from not noted to limited on the air samples.

Sincerely,



Neil G. Carlson, C.I.H.  
N.G. Carlson Analytical, INC.

### III. Sampling Discussion

Typically, in post fire remediation strategies recommended by fire restoration companies and insurance companies, walls, ceilings and floors that do not show signs of actual fire damage [e.g. char, physically burned materials] are left in place and either surfaced cleaned or repainted. Post remediation complaints from building occupants often include descriptions of a “lingering smoke smell” months and years later, particularly when large variations in temperature and humidity

occur. Soot left in these cavities is “recharged” by this increase in water vapor drive from the humidity causing the smell to present.

FBS collected a total of 19 interior samples at the Jim Wood’s Strip Center building. The primary purpose of the sample collection was to determine whether or not smoke soot consistent with the reported fire event is in the ceiling, wall, floor and ducting cavities, wire chase ways and other open bypass areas and assist in developing recommendations for repairs.

All the air samples were collected with an air sampling pump calibrated to run at a volume of 15 liters per minute. The sample duration varied by location. The air samples were collected with Air-O-Cell sampling cassettes.

The ambient air samples were collected for a five-minute sample period to use for comparison purposes. Tape lifts were collected from visible surfaces where no sign of soot was viewed.

The sample locations were chosen based on my training, education and experience and the site-specific inspections and similar projects with similar failure mechanisms. All the samples were collected and entered in to a sample chain of custody. After the sampling was completed, the samples were delivered to Neil Carlson, CIH, of NG Carlson Analytical. The analysis of the results is included in the report from him.

In addition to the sample chain of custody, the locations of all the samples were written down in a site log book so that the information can be more easily viewed.

#### IV. Description of Soot

Definition of Soot:

*Soot is a general term that refers to the black, impure carbon particles resulting from the incomplete combustion of a hydrocarbon. It is more properly restricted to the product of the gas-phase combustion process but is commonly extended to include the residual pyrolyzed fuel particles such as cenospheres, charred wood, petroleum coke, etc. that may become airborne during pyrolysis and which are more properly identified as cokes or chars. The gas-phase soots contain polycyclic aromatic hydrocarbons (PAHs). The PAHs in soot are known mutagens and probable human carcinogens. Soot is in the general category of airborne particulate matter, and as such is considered hazardous to the lungs and general health. Soot is classified as a "Known Human Carcinogen" by the International Agency for Research on Cancer (IARC).<sup>i</sup>*

#### V. Conclusions

Soot and/or Char was found in concentrations of 1.0 particles per field or greater in 12 of the 19 locations sampled [63% of the samples taken]. Of the 19 samples all that had soot/char, only samples #13 and #16 had higher than normal background levels. Generally, interior partition walls and ceiling areas below the roof were affected, while exterior walls were not affected. Venting and the attic assembly were typically affected, as well as ceiling light fixtures.

Based on the results of the sampling, all insulation should be removed from the attic and all framing, exposed roof deck sheathing, ducting, and top surface of exposed upper ceiling in the

attic should be cleaned by HEPA and back sprayed with BIN primer. Ducting should also be cleaned.

All ceiling lights should be detached, cleaned and reset. To eliminate cross contamination, removal should be done using enclosed critical containments and HEPA units.

Forensic Building Science's opinions and recommendations are made without regard to coverage. The Insurance Carrier determines coverage and any issues related to coverage are the responsibility of the Insured and the Carrier. Discovery is ongoing. Additional testing and inspections may need to be performed and additional and/or supplemental information and opinions may be contained in future reports issued by Forensic Building Science, Inc. This report is the exclusive property of the client noted previously and cannot be relied upon by a third party. Copies of this report are released to third parties only by written permission of the client.

---

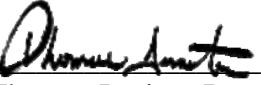


Adam Piero, Field Investigator

November 17, 2017

Date

---



Thomas Irmriter, President & Owner

November 17, 2017

Date

---

<sup>i</sup> Reference

US Department of Health and Human Services. Public Health Service, National Toxicology Program. Report on Carcinogens, Twelfth Edition. 2011. Accessed at <http://ntp.niehs.nih.gov/ntp/roc/twelfth/roc12.pdf> on June 14, 2011.